

551.506 (73) DETAILS OF THE WEATHER IN THE UNITED STATES.

GENERAL CONDITIONS.

The feature of the month which seems of greatest importance was the change which took place on the 18th from the dry to the wet type of weather for California. The rains in that State continued during the remainder of the month, being unusually heavy in the southern portion. Elsewhere in the United States with the single exception of the Lake region precipitation was deficient.

Temperature was below normal in New England and the extreme Northwest; elsewhere it was in excess by from 1° to 6°.

The storm of the 18th-19th in the Lake region was attended by winds of hurricane force.

CYCLONES AND ANTICYCLONES.

By W. P. DAY, Observer.

Low pressure areas were not so numerous as during the preceding month, but included some very severe storms off the North Atlantic coast, over the region of the Great Lakes, and during the third decade off the Pacific coast. Both the Alberta and South Pacific types greatly exceeded the normal. However, the South Pacific type did not make its appearance until after the disintegration of the great plateau HIGH which persisted during the first half of the month. High pressure areas were about normal as to type and rather strongly developed, as they usually are at this season.

Tables showing the number of HIGHS and LOWS by types follow:

LOWS.	Al- berta.	North Pa- cific.	South Pa- cific.	North- ern Rocky Moun- tain.	Colo- rado.	Texas.	East Gulf.	South At- lantic.	Cent- ral.	Total.
December, 1921..	9.0	1.0	5.0	1.0	1.0	1.0	1.0	19.0
Average number 1892-1912 inclu- sive.....	4.3	2.5	0.8	0.3	1.1	2.5	0.2	0.3	0.4	12.4

HIGHS.	North Pacific.	South Pacific.	Al- berta.	Pla- teau and Rocky Moun- tain Region.	Hud- son Bay.	Total.
December, 1921..	3.0	1.0	6.0	1.0	11.0
Average number, 1892-1912 inclusive	1.1	1.2	4.7	1.3	0.5	8.5

THE WEATHER ELEMENTS.

By P. C. DAY, Climatologist and Chief of Division.

[Weather Bureau, Washington, February 1, 1922.]

PRESSURE AND WINDS.

During the first half of the month high atmospheric pressure was maintained almost constantly over the Plateau region and the far Northwest, the average for this period being far above the normal and at points the highest pressures ever observed were recorded near the

first of the month. At the same time storm areas from the Pacific that usually enter the United States over the far Northwest were forced northward into the British possessions, moving thence southward into the United States east of the Rocky Mountains, and thence to the Atlantic coast. Some of these storms developed considerable energy in the region of the Great Lakes and further eastward, with the result that the average pressure during the first half of the month was less than normal over most central and eastern districts.

By the middle of the month high pressure had developed over the eastern portion of the country, the far western HIGH that had persisted so long showed signs of breaking up, and storm areas began to enter the United States at lower latitudes, with resultant heavy rains in California reaching to the southern extremity of the State.

During the latter half of the month strong anticyclonic areas entered the Missouri Valley States from the adjoining British Provinces in rapid succession, and moving eastward over the central valleys to the Atlantic coast dominated the weather from the Rocky Mountains eastward. During this period pressure remained low over the Pacific Coast States, particularly over the far Southwest, where heavy rains, high winds, and flood conditions were reported.

For the month as a whole, pressure averaged less than the normal over all districts from the Mississippi River eastward, although the departures were usually small. Over the Great Plains, Rocky Mountain regions, and the far Northwest, as well as in the western Canadian Provinces, the average pressure was above normal, while over California and the adjacent portions of the Plateau the averages were below normal.

The prevailing winds were variable to an unusual degree, but in the main they were from north to west points over the Great Plains, upper Mississippi Valley, Lake region, and Northeastern States, and from southerly points in the Ohio and lower Mississippi Valleys, and portions of the Gulf States.

High winds occurred over extensive areas and wide property damage resulted, particularly in connection with the storm over the Great Lakes and districts to the eastward on the 17th and 18th.

TEMPERATURE.

December on the whole was a warm month, only small areas in the extreme Northeast and the far Northwest having averages below the monthly normal. The month was distinctly warm in the southern portions of the country and over the Dakotas, where the average excess was about 6°, and at a few points in the Southeastern States the monthly averages were the highest of record for December.

The first half of the month had few important temperature changes, and generally mild weather for the season of the year prevailed in most districts.

About the 16th considerably colder weather over-spread the Plateau and Rocky Mountain districts and during the following few days extended rapidly eastward and southeastward, bringing the coldest weather of the month over many far western districts and the southern portions of the country as far east as the Middle Gulf States. Another period of moderately cold weather